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Prox te Cause of Pain

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Among the various subjects interesting to the Medical Philosopher none are more so than the proximate cause of pain; yet, unfortunately, for the science of Medicine, it has been but little attended to - the cause of which I need not attempt to ascertain: I will only observe, it may, in part, result from our known ignorance of the nature of the nervous power - It is, however, by no means justifiable on this principle, in as much as it affords no indication of similar difficulties to the investigation of the mode in which agents act in exciting the power constituting pain —

For the proximate cause of pain, I would assign, pressure upon some portion of the nervous system.

To be satisfied, this hypothesis is correct, will only require some attention to the state of a part in which pain exists and the modus operandi of measures or means by which it is removed —

In most cases, pressure will be obvious. If, for instance, I compress my lip, with

my teeth, I find pain the immediate consequence and if, I do not press hard enough to produce discoloration and thereby call in the aid of the circulating fluids, I find when I remove the pressure the pain ceases. In more than nine tenths of the pain which animated Nature suffers the immediate agents of pressure are the circulating fluids. Nor are we surprised, this should be the case when we reflect upon the immense number of agents capable of causing some inequality in their distribution. They produce pressure often from congestion & frequently induce the same by collapse - Instances of the former we have in Apoplexy, Pneumonia and all local inflammations &c - of the latter, hemorrhages, Typhus &c -

The remedies for the first class all act by diminishing pressure - Venesection, by abstracting a part of the stimulus of the heart and large arteries, diminishes the Vis a tergo, and by lessening the volume of fluids in the large vessels assists the small ones, which are always more than proportionably

distended) to empty themselves. Cathartics, neutral salts, antimonials, tartar, rest &c &c produce ultimately the same effects which we have ascribed to Venesection. Blisters act by enabling the small vessels to contract with more energy, thereby to regain their natural dimensions, and by actually drawing off a part of the superabundant fluids. When applied to a distant part, they act by exciting a sympathetic or counter action, and here I should suppose them very little superior to rubefacient —

That blisters act in the mode I have ascribed to them is probable, from their peculiar good effects in Erysipelas, and other superficial local inflammations, when relaxing measures as poultices, &c harm —

Prepare from collapse as in typhus where from its being general and not very great we find much anxiety restlessness &c. requires not only stimuli but nutrientia. Here we should certainly use different agents

as different symptoms may indicate, If, Typhus delirium supervene, it should be removed by opium which determines more to the head than most other stimulants — I will take the liberty of mentioning, that it is probable Typhus delirium may occur when there is in the system a sufficiency of blood to prevent it, were it equally distributed or it may be of a more alarming nature, when there is not a quantum sufficit, tho it be equally distributed — Hence some judgment may be necessary in the choice of medicines or remedies —

It is from the agency of the circulating fluids (The weakest parts are the first to suffer) and the viscera so often seats of disease; in the acute state of which we find copious depletion so often indispensably necessary —

In further support of the idea I will mention that we always

find pain in proportion to the degree of pressure (allowing it to be sufficient to cause pain, and not to transcend the grade which would destroy sensibility)

In phlegmonous inflammation we observe pain to be more acute as pressure increases, and just before suppuration takes place, when the vessels are distended almost to their ne plus ultra causing great pressure, more especially, on the nerves of their coats, which have necessarily their fibres approximated in consequence of distention, we find the pain very great, which quickly subsides when from the secretion of pus, (now deposited under the skin in the cavities of the cellular membrane) the vessels regain their proper dimensions. But should matter be formed under tendinous fascia which can not yield we find the pain very violent from the pressure still continuing. Here a surgical operation should remove the pressure — We also find pain in ligamentous & tendinous parts more severe

than that of Muscular portions of the System, when it does occur ~~[illegible]~~

Their being insensible in a sound state, also favouring the idea, because they are insensible only from the difficulty of applying pressure, the nerves supplying them being so small as to be difficult to compress; and very little to favour it, for they possess very little contractility and their vessels being so small as to be incapable of any speedy congestion, yet they congestion does always take place before they become inflamed or painful, which causes great pressure from their tissue being unyielding; for the same reason pain & inflammation in these parts are hard and tedious to remove — In cases of ruptured tendons we are told that a burning sensation is all that is perceived at first — this arises from slight compression of their very minute nerves —

Hence too we find the burning sensation very common in Erysipelatous and other inflammations situated near the superficies of the body where the nerves are very numerous the sensation peculiar to heat depends on caloric readily producing this kind of pressure - Hence too the sensation of cold is for a moment very much like that of heat - But carry these to a more intense degree, from the agency of the circulating fluids &c. they will both be confounded with pain from other causes. Pain in the teeth is more severe (taking into consideration the quantum of nerve acted upon, as should be done) than that from almost any other source, because the nerve here being surrounded by a hard bony wall which cannot yield must suffer immense compression. The passing of gall stones, urinary calculi &c

given extreme pressure

I will not here multiply cases, which might be done ad infinitum; nor are they necessary, for should any be disposed to adopt the idea, they can not be at any loss to see how many are the agents and how diverse their modus operandi in causing & removing pressure - I will only add, I can not perceive any case of pain, either direct or sympathetic, mechanical or otherwise, which may not be as plausibly accounted for on this, as on any other principle, but should it, when exposed to better light exhibit points vulnerable to be defended, I will promptly and with pleasure surrender it at discretion.

I am fully aware that I have observed nothing like system - that I have taken too much perhaps for granted - that I have omitted many thing almost inseperably

ounceto with the subject and supplied their place with others very little to the purpose — that the orthography syntax and especially the almost illegible scrawl render all the limits liberally conjectable a true gem nor. However, there, I hope, it will occur when it is recollected, that it is certainly the legitimate

Infans necessitatis —

December 1st 1813